

## A Revision of the Madeiran species of *Geostiba* (Coleoptera: Staphylinidae). Supplement I.

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**A Revision of the Madeiran species of *Geostiba* (Coleoptera: Staphylinidae). Supplement I.** - A study of recently collected material of Staphylinidae from the Madeiran archipelago yielded 4 new species of the *G. lindrothi* species group, which are described and keyed: *G. ericicola* sp. n., *G. temeris* sp. n., *G. tenebrarum* sp. n. and *G. noctis* sp. n. In addition, further data on the distribution and bionomics of the known Madeiran *Geostiba* are presented.

**Key-words:** Coleoptera - Staphylinidae - Aleocharinae - *Geostiba* - Madeira - taxonomy - new species - distribution

### INTRODUCTION

According to ASSING & WUNDERLE (1996) *Geostiba* Thomson, 1858 is represented in the Madeiran archipelago by 15 endemic species, far more than any other genus of Staphylinidae. However, from the material and further data available the authors concluded that the knowledge of Madeiran *Geostiba* was far from complete and that further species remained to be discovered.

During a joint excursion to Madeira, Arved Lompe, Lothar Zerche and I collected abundant material of Coleoptera, especially Staphylinidae, among them 1399 specimens of *Geostiba*. Several species previously known only from the type locality were recorded from further localities. In addition, the material contained four new species, all but one from the area east of Encumeada, below the Pico do Jorge.

Below, the collections are abbreviated as follows: DEI = Deutsches Entomologisches Institut Eberswalde; MHNG = Muséum d'histoire naturelle, Genève; cAss = author's collection.

### NEW RECORDS OF THE MADEIRAN SPECIES OF *GEOSTIBA* THOMSON

#### *Geostiba formicarum* (Wollaston, 1854)

2 ♂♂, 1 ♀, Rabacal, 1000m, mixed stand of *Erica arborea* and *Laurus* sp., 23.III. 1996, leg. Assing (cAss); 116 ex., same data, leg. Zerche (DEI); 3 ♂♂, 1 ♀. same locality,

950m, *Laurus* wood, 2.IV.1996, leg. Lompe (cAss); 45 ♂♂, 50 ♀♀, same locality, 950m, stands of *Laurus* sp., *Vaccinium padifolium* and *Erica arborea*, 3.IV.1996, leg. Assing & Lompe (cAss); 68 ex., same data, leg. Zerche (DEI); 1 ex., Ribeira da Janela, N Fanal, 900m, *Laurus* wood in northern exposition, 25.III.1996, leg. Zerche (DEI); 4 ♂♂, 1 ♀, Ribeira da Janela, S Fanal, 1300m, mixed stand of *Laurus* sp., *Vaccinium padifolium* and *Erica arborea*, 25.III.1996, leg. Assing (cAss); 3 ex., same data, leg. Zerche (DEI); 1 ♂, 1 ♀, E Encumeada below Pico do Jorge, 1500m, stand of *Erica* sp. with scattered *Laurus* sp., 26.III.1996, leg. Assing (cAss); 5 ♂♂, 5 ♀♀, E Encumeada below Pico do Jorge, 1300m, stands of *Erica* sp., *Laurus* sp. and *Vaccinium padifolium*, 26.III.1996, leg. Assing (cAss); 26 ♂♂, 13 ♀♀, E Encumeada below Pico do Jorge, 1300m, in deep and moist *Laurus* litter below old *Laurus* tree, 30.III.1996, leg. Assing (cAss); 4 ♂♂, 6 ♀♀, S Seixal, Ribeira do Seixal, 550m, *Laurus* wood near stream, 31.III.1996, leg. Assing (cAss); 2 ex., same data, leg. Zerche (DEI).

Before, *G. formicarum* was known only from Rabacal, where this species is apparently very abundant, and from the type localities. The new records show that it is rather widespread at least in the northwest of Madeira proper (west of the Pico Ruivo - Pico Arieiro mountain range), where it inhabits natural woodlands, particularly *Laurus* woods, from an altitude of 550m to 1500m. Part of the specimens collected on 25.III. and 3.IV. were teneral. Larvae, probably of this species, were taken on 25.III.

### ***Geostiba filiformis* (Wollaston, 1854)**

37 ♂♂, 67 ♀♀, Porto Santo, Pico Facho, 500m, mixed stand of *Pinus* sp., *Laurus* sp. and *Erica arborea*, 1.IV.1996, leg. Assing (cAss); 18 ♂♂, 12 ♀♀, same data, leg. Zerche (DEI); 29 ♂♂, 30 ♀♀, Porto Santo, Pico Branco, 450m, stands of *Pinus* sp., *Laurus* sp. and *Erica* sp., 1.IV.1996, leg. Assing (cAss); 5 ♂♂, 9 ♀♀, same data, leg. Zerche (DEI); 7 ♂♂, 11 ♀♀, Porto Santo, Pico Juliana, 450m, stands of *Pinus* sp., *Laurus* sp. and *Erica* sp., 1.IV.1996, leg. Lompe (cAss); 7 ♂♂, 8 ♀♀, same data, leg. Zerche (DEI).

*G. filiformis* is now known to inhabit the northern slopes of the four highest peaks in the west of Porto Santo. Together with the adult beetles, many of which were teneral, a number of larvae were collected.

### ***Geostiba arieiroensis* Assing & Wunderle, 1996**

3 ♂♂, 7 ♀♀, Pico Arieiro, 1600m, mixed stands of *Erica* sp. and *Vaccinium padifolium* in southern exposition [type locality], 21.III.1996, leg. Assing (cAss); 2 ♂♂, 3 ex., same data, leg. Zerche (DEI); 7 ♂♂, 25 ex., Pico Arieiro, 1650m, 21.III.1996, leg. Zerche (DEI).

The species is only known from the type locality.

### ***Geostiba ruivomontis* Assing & Wunderle, 1996**

42 ♂♂, 40 ♀♀, northern slope of peak of Pico Ruivo, 1850m, stand of *Erica* sp., 29.III.1996, leg. Assing (cAss); 3 ♂♂, 5 ex., western slope of peak of Pico Ruivo, 1850m, stand of *Erica* sp., 29.III.1996, leg. Zerche (DEI); 41 ♂♂, 39 ♀♀, NE Pico Ruivo, Achada do Teixeira, 1350m, stand of old *Erica arborea* in northern exposition [type locality], 29.III.1996, leg. Assing (cAss); 16 ♂♂, 42 ex., same data, leg. Zerche (DEI).

This species, so far known only from altitudes of 1350 - 1600m, also inhabits the peak of the highest Madeiran mountain, where it was collected together with numerous specimens of *Atheta leileri* (Palm).

***Geostiba bicacanaensis* Assing & Wunderle, 1996**

1 ♀, E Encumeada below Pico do Jorge, 1500m, stand of *Erica* sp. with scattered *Laurus* sp., 26.III.1996, leg. Assing (cAss); 48 ♂♂, 15 ♀♀, E Encumeada below Pico do Jorge, 1300m, stands of *Erica* sp., *Laurus* sp. and *Vaccinium padifolium*, 26.III.1996, leg. Assing (cAss); 5 ♂♂, 12 ex., same data, leg. Zerche (DEI); 3 ♀♀, same locality, 30.III.1996, leg. Assing (cAss); 1 ♂, E Encumeada below Pico do Jorge, 1300m, in deep and moist *Laurus* litter below old *Laurus* tree, 30.III.1996, leg. Assing (cAss); 1 ♂, Seixal, Ribeiro do Seixal, 500m, Laurisilva, on fungus *Clavaria lauri*, 31.III.1996, leg. Zerche (DEI).

This species was formerly known only from Bica da Cana. Interestingly, the length and shape of the spine-like process at the base of the ventral process of the median lobe differs between populations. While it is minute in specimens from the type locality (see Fig. 5a-b in ASSING & WUNDERLE 1996, p. 130), it is short, but distinct in ♂♂ from the area east of Encumeada (Fig. 1c), and conspicuously long in the single ♂ from Seixal (Fig. 1a-b). Either these populations, particularly the one from Seixal, represent different (sub-?) species, or this phenomenon is an expression of intraspecific (clinal?) variation. Since no further differential characters were found,

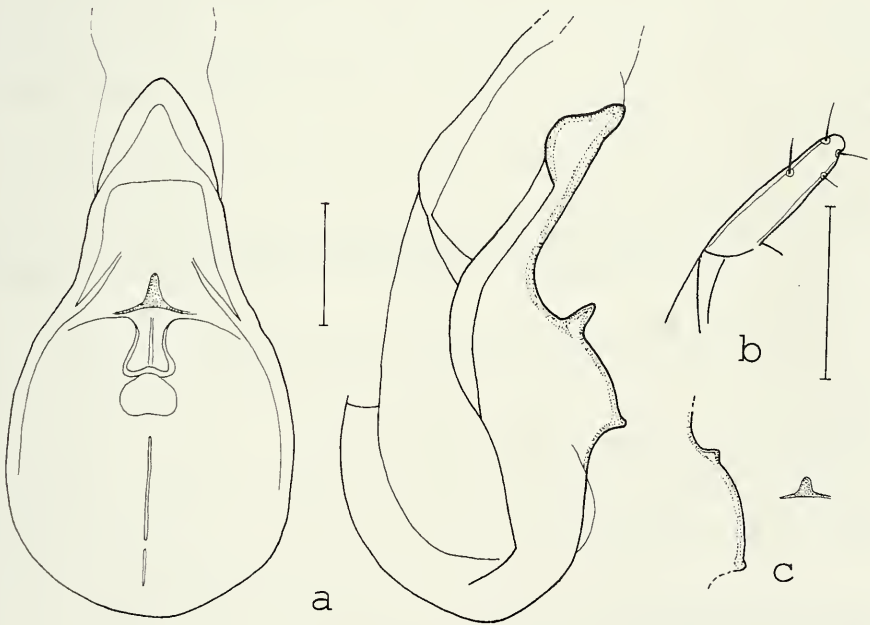


FIG. 1

*Geostiba bicacanaensis* Assing & Wunderle: aedeagus in ventral and in lateral view (a) and apical lobe of paramere of ♂ from Seixal; spine-like process of median lobe (c) in lateral (left) and ventral view (right) of ♂ from the area east of Encumeada.

however, and without more material from Seixal and from further localities at hand, a description of new taxa is refrained from, and the specimens listed above are treated as representatives of one variable species.

Several of the specimens collected on 26.III. were teneral.

### **Geostiba portosantoi** Franz, 1981

1 ♂, Porto Santo, Pico Facho, 500m, mixed stand of *Pinus* sp., *Laurus* sp. and *Erica arborea*, I.IV.1996, leg. Assing (cAss).

This is the first record of *G. portosantoi* - previously known only from the Pico Juliana - from the Pico Facho.

### **Geostiba brancomontis** Assing & Wunderle, 1996

2 ♀♀, Porto Santo, Pico Branco, 450m, stands of *Pinus* sp., *Laurus* sp. and *Erica* sp., I.IV.1996, leg. Assing (cAss).

There had been considerable doubts that the population of this species, apparently a local endemic of the Pico Branco on Porto Santo and previously only once recorded there in 1968, still existed (ASSING & WUNDERLE 1996). This question is now answered, but since only small patches of natural vegetation have remained on the peak of the Pico Branco, *G. brancomontis* must be regarded as highly threatened by extinction.

### **Geostiba lindrothi** Franz, 1981

5 ♂♂, E Encumeada below Pico do Jorge, 1300m, stands of *Erica* sp., *Laurus* sp. and *Vaccinium padifolium*, 26.III.1996, leg. Assing (cAss); 3 ♂♂, 2 ♀♀, same locality, 30.III.1996 leg. Assing (cAss).

This further record indicates that, as far as is known at present, this species may be more widely distributed than the other species of the *lindrothi* group.

### **Geostiba graminicola** Assing & Wunderle, 1996

1 ♂, 3 ♀♀, E Encumeada below Pico do Jorge, 1300m, stands of *Erica* sp., *Laurus* sp. and *Vaccinium padifolium*, 26.III.1996, leg. Assing (cAss); 1 ♂, 1 ♀, same locality, in stand of old *Erica arborea*, 30.III.1996, leg. Assing (cAss).

*G. graminicola* was previously known only from the type locality near the peak of the Pico Arieiro.

### **Geostiba vaccinicola** Assing & Wunderle, 1996

4 ♀♀, Pico Arieiro, 1650m, stands of *Vaccinium padifolium* [type locality], 21.III.1996, leg. Zerche (DEI).

The known distribution of the species is restricted to the type locality.

***Geostiba lauricola* Assing & Wunderle, 1996**

1 ♂, 8 ♀♀, Ribeira da Janela, N Fanal, 900m, *Laurus* wood in northern exposition [type locality], 25.III.1996, leg. Assing (cAss); 5 ex., same data, leg. Zerche (DEI); 1 ♂, Ribeira da Janela, Fanal, 1000m, mixed stand of *Laurus* and old *Erica arborea*, 25.III.1996, leg. Assing (cAss); 1 ex., same data, leg. Zerche (DEI); 1 ♀, Ribeira da Janela, Fanal, 1100m, in debris near pond, 25.III.1996, leg. Assing (cAss); 39 ♂♂, 26 ♀♀, S Seixal, Ribeira do Seixal, 550m, *Laurus* wood near stream, 31.III.1996, leg. Assing (cAss).

This species, previously known only from the type locality, seems to be widely distributed in the vast *Laurus* woods of the Ribeira da Janela and the Ribeira do Seixal in the northwest of Madeira, where it was in most cases collected together with *G. occulta*. Some of the specimens taken on 31.III. were teneral.

***Geostiba caligicola* Assing & Wunderle, 1996**

1 ♂, northern slope of peak of Pico Ruivo, 1850m, stand of *Erica* sp., 29.III.1996, leg. Assing (cAss); 7 ♂♂, 10 ♀♀, E Pico Ruivo, 1700m, in shade of big rock near, sieved from grass and moist fern debris, 29.III.1996, leg. Assing (cAss); 2 ♀♀, same data, leg. Zerche (DEI).

Apparently, *G. caligicola*, occurs at high altitudes (1600 - 1850m) and is still only known from the northern slope of the Pico Ruivo.

***Geostiba occulta* Assing & Wunderle, 1996**

18 ♂♂, 21 ♀♀, Ribeira da Janela, N Fanal, 900m, *Laurus* wood in northern exposition [type locality], 25.III.1996, leg. Assing (cAss); 4 ♂♂, same data, leg. Zerche (DEI); 11 ♂♂, 39 ♀♀, Ribeira da Janela, Fanal, 1000m, mixed stand of *Laurus* sp. and old *Erica arborea*, 25.III.1996, leg. Assing (cAss); 5 ♂♂, 3 ♀♀, same data, leg. Zerche (DEI); 1 ♀, S Porto Moniz, 400m, *Laurus* wood in northern exposition, 28.III.1996, leg. Assing (cAss); 26 ♂♂, 44 ♀♀, S Seixal, Ribeira do Seixal, 550m, *Laurus* wood near stream, 31.III.1996, leg. Assing (cAss); 8 ♂♂, 7 ♀♀, same data, leg. Zerche (DEI); 1 ♀, Rabacal, 1000m, *Laurus* wood, 23.III.1996, leg. Zerche (cAss).

Previously only known from the type locality, *G. occulta* is obviously widespread in the Ribeira da Janela and the adjacent Ribeira do Seixal in the northwest of Madeira, where it inhabits natural woodland, especially *Laurus* woods at intermediate altitudes (400 - 1000m). On 25.III. and 31.III., several larvae, very likely of this species, were collected together with the adult beetles, many of which were teneral.

***Geostiba endogea* Assing & Wunderle, 1996**

1 ♂, Ribeira da Janela, N Fanal, 900m, *Laurus* wood in northern exposition, 25.III.1996, leg. Zerche (DEI); 8 ♂♂, 5 ♀♀, Ribeira da Janela, Fanal, 1000m, mixed stand of *Laurus* and old *Erica arborea*, 25.III.1996, leg. Assing (cAss); 1 ♀, Ribeira da Janela, S Fanal, 1300m, mixed stand of *Laurus* sp., *Vaccinium padifolium* and *Erica arborea*, 25.III.1996, leg. Assing (cAss); 3 ♂♂, 3 ♀♀, E Encumeada below Pico do Jorge, 1300m, stands of *Erica* sp., *Laurus* sp. and *Vaccinium padifolium*, 26.III.1996, leg. Assing (cAss); 3 ex., same data, leg. Zerche (DEI); 9 ♂♂, 4 ♀♀, same locality, 30.III.1996, leg. Assing (cAss); 1 ♂, same locality, in stand of old *Erica arborea*, 30.III.1996, leg. Assing (cAss); 15 ♂♂, 4 ♀♀, E Encumeada below Pico do Jorge, 1300m, in deep and moist *Laurus* litter below old *Laurus* tree, 30.III.1996, leg. Assing (cAss).

The presently known distribution of *G. endogea* extends from the Ribeiro da Janela to the Pico do Jorge, where it inhabits natural woodland at higher elevations (800 - 1300m). Part of the specimens collected on 25.III. and 30.III. were teneral.

## DESCRIPTIONS OF NEW SPECIES

All new species belong to the *G. lindrothi* species group, which are externally highly similar and which can be distinguished with certainty only through examination of the ♂ genitalia. For comparison and further details, the descriptions and illustrations in ASSING & WUNDERLE (1996) are referred to.

In the descriptions, measurements of head width (HW), pronotal width (PW) and length (PL), length of elytra at suture (EL) and the length from labrum to elytral apex (SL) are indicated in  $\mu\text{m}$ , the total length from labrum to hind margin of tergite VIII (TL) is given in mm. The arithmetic mean (in parentheses) is given only when more than 20 specimens were available.

In two new species the ♀ sexual characters are not described and ♀♀ are not included in the type series, due to the lack of material or to the impossibility of assigning ♀♀ to the corresponding ♂♂, which was the case for 23 ♀♀ taken below the Pico do Jorge.

### *Geostiba ericicola* sp. n.

Figs 2 a - b

HOLOTYPE ♂: P. Madeira, Achada do Teixeira, *Erica*-Bestand, N-Hang, 1350m, 29.III.1996, leg. Assing (cAss).

PARATYPES: 2 ♂♂, same data as holotype (cAss, MHNG).

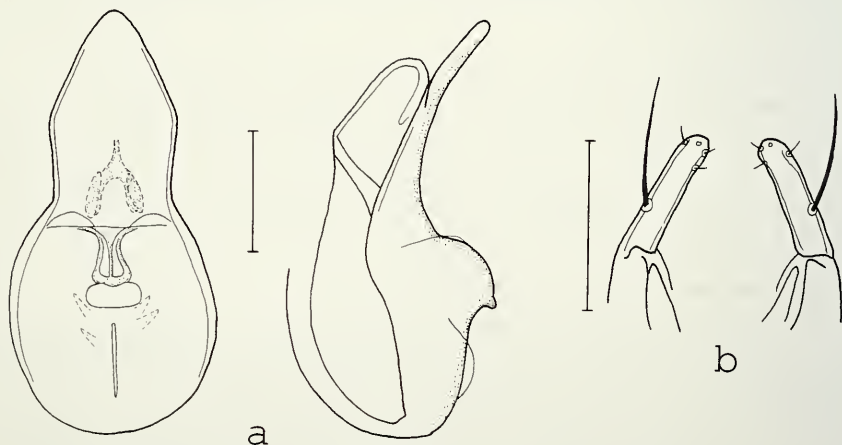


FIG. 2

*Geostiba ericicola* sp. n. (HT): aedeagus in ventral and in lateral view (a); apical lobes of parameres. Scales: 0.1 mm.

DESCRIPTION: Measurements (n = 3): HW: 255-270; PW: 285-300; PL: 270-285; EL: 180-195; SL: 830-845; TL: 2.2-2.3.

Colour and external morphology as in *G. lindrothi* Franz.

♂: median lobe with ventral process of characteristic shape, in ventral view slightly constricted at base and in lateral view very slender, not widened at apex as in the other species of the *G. lindrothi* group; internal sac with some very weakly sclerotized spines (Fig. 2a); apical lobe slender and distinctly parallel, its setal pattern similar to *G. vaccinicola* Assing & Wunderle (Fig. 2b).

♀: unknown.

*Derivatio nominis*: The name refers to the vegetation of the type locality.

DISTRIBUTION AND BIONOMICS: At present, *G. ericicola* is known only from the type locality (which is also the type locality of *G. ruivomontis* Assing & Wunderle and of *Stenus ruivomontis* Assing & Wunderle), where it was sieved from soil and litter in an old stand of *Erica arborea* in northern exposition.

### *Geostiba temeris* sp. n.

Figs 3 a - d

HOLOTYPE ♂: `P. Madeira, O Encumeada-Pass, b. Pico do Jorge, 1300m, 30.III.1996, leg. Assing´ (cAss).

PARATYPES: 9 ♂♂, 8 ♀♀, same data as holotype (coll. Assing); 5 ♂♂, same locality as holotype, 26.III.1996 (cAss, coll. Wunderle, DEI, MHNG).

DESCRIPTION: Measurements (n = 22): HW: 255-270 (261); PW: 285-320 (295); PL: 265-285 (273); EL: 180-195 (187); SL: 785-845 (814); TL: 2.1-2.4 (2.2).

Colour and external morphology as in *G. lindrothi* Franz.

♂: internal sac of median lobe with two long rows of distinctly sclerotized spines (Fig. 3a); apical lobe of paramere shaped as in Fig. 3b, with one long and three short setae, the subapical short seta slightly longer than the apical ones.

♀: hind margin of sternum VIII distinctly concave posteriorly, but less so than in *G. graminicola* Assing & Wunderle (Fig. 3d); spermatheca as in Fig. 3c.

*Derivatio nominis*: The name (genitive of *temus* (lat.): darkness) refers to the subterranean habitat of the species.

DISTRIBUTION AND BIONOMICS: All of the type series was sieved beneath an old *Laurus* tree in northern exposition from an extremely deep (> 20 cm) *Laurus* litter layer and the soil below (see above for further details regarding the type locality); in the same samples *G. bicacanaensis* Assing & Wunderle and numerous specimens of *G. endogea* Assing & Wunderle and *G. formicarum* (Wollaston) were present. The ovaries of 3 ♀♀ contained mature eggs.

### *Geostiba tenebrarum* sp. n.

Figs 4 a - d

HOLOTYPE ♂: `P. Madeira, O Encumeada-Pass, b. Pico do Jorge, 1300m, 30.III.1996, leg. Assing´ (cAss).

PARATYPES: 5 ♂♂, same data as holotype; 5 ♂♂, same locality as holotype, 26.III.1996 (cAss, coll. Wunderle, MHNG).

DESCRIPTION: Measurements (n = 11): HW: 280-300; PW: 315-350; PL: 300-325; EL: 195-210; SL: 845-935; TL: 2.2-2.5.

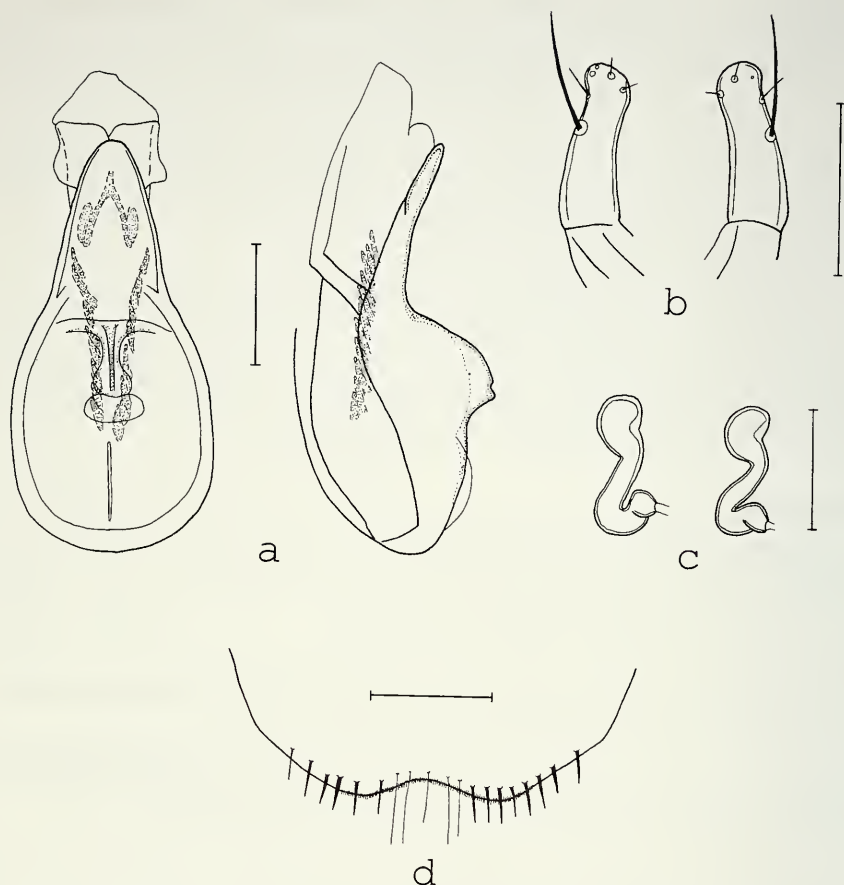


FIG. 3

*Geostiba temeris* sp. n. (♂: HT): aedeagus in ventral and in lateral view (a); apical lobes of parameres (b); spermathecae (c); hind margin of ♀ sternite VIII (d). Scales: 0.1 mm.

Colour and general external morphology as in *G. lindrothi* Franz, but larger (see measurements).

♂: internal sac of median lobe with two rows of 3 - 5 distinctly sclerotized spines (Fig. 4a); shape of median lobe similar to *G. lindrothi*; apical lobe with setal pattern similar to *G. lindrothi*, but slenderer and more parallel than in that species, and insertion of long seta usually nearer to base of apical lobe (Figs 4b-d).

*Derivatio nominis*: tenebrarum (genitive of tenebrae (lat.): darkness) alludes to the subterraneous habitat.



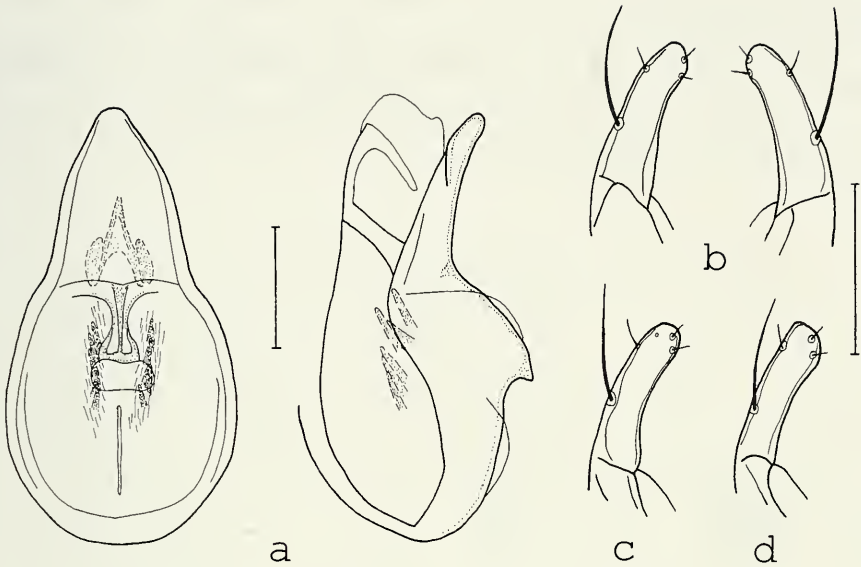


FIG. 4

*Geostiba tenebrarum* sp. n.: aedeagus (HT) in ventral and in lateral view (a); apical lobes of parameres (b: HT, c - d: PTT). Scales: 0.1 mm.

**DISTRIBUTION AND BIONOMICS:** The type specimens were sieved near the type locality of *G. teneris* sp. n. from soil and litter in mixed stands of *Laurus* sp., *Vaccinium padifolium* and *Erica* sp., together with *G. bicacanaensis*, *G. endogea*, *G. lindrothi* and the following new species.

***Geostiba noctis* sp. n.**

Figs 5 a - d

**HOLOTYPE** ♂: 'P. Madeira, O Encumeada-Pass, b. Pico do Jorge, 1300m, 30.III.1996, leg. Assing' (cAss).

**PARATYPES:** 1 ♂, 1 ♀, same locality as holotype. 26.III.1996, leg. Zerche (DEI, cAss).

**DESCRIPTION:** Measurements (n=3): HW: 285-295; PW: 330-340; PL: 300-320; EL: 195-205; SL: 875-920; TL: 2.2-2.4.

Colour and general external morphology as in *G. lindrothi* Franz, but larger, similar in size to *G. tenebrarum* sp. n. (see measurements); eyes without trace of pigmentation, a character shared only with the smaller *G. graminicola*.

♂: ventral process of median lobe of characteristic shape, in ventral view broadly triangular and pointed at apex, in lateral view relatively broad; internal sac with pair of dark, but relatively weakly sclerotized assemblages of structures (Fig. 5a); apical lobe of paramere relatively shorter and stouter than in the related species, subapical external seta short, but distinctly longer than the apical ones (Fig. 5b).

♀: hind margin with an uninterrupted row of stout bristles (Fig. 5d); spermatheca as in Fig. 5c.

*Derivatio nominis*: noctis (genitive of nox (lat.): night, darkness) refers to the subterranean habitat.

DISTRIBUTION AND BIONOMICS: The types were collected under the same circumstances as *G. tenebrarum* sp. n.

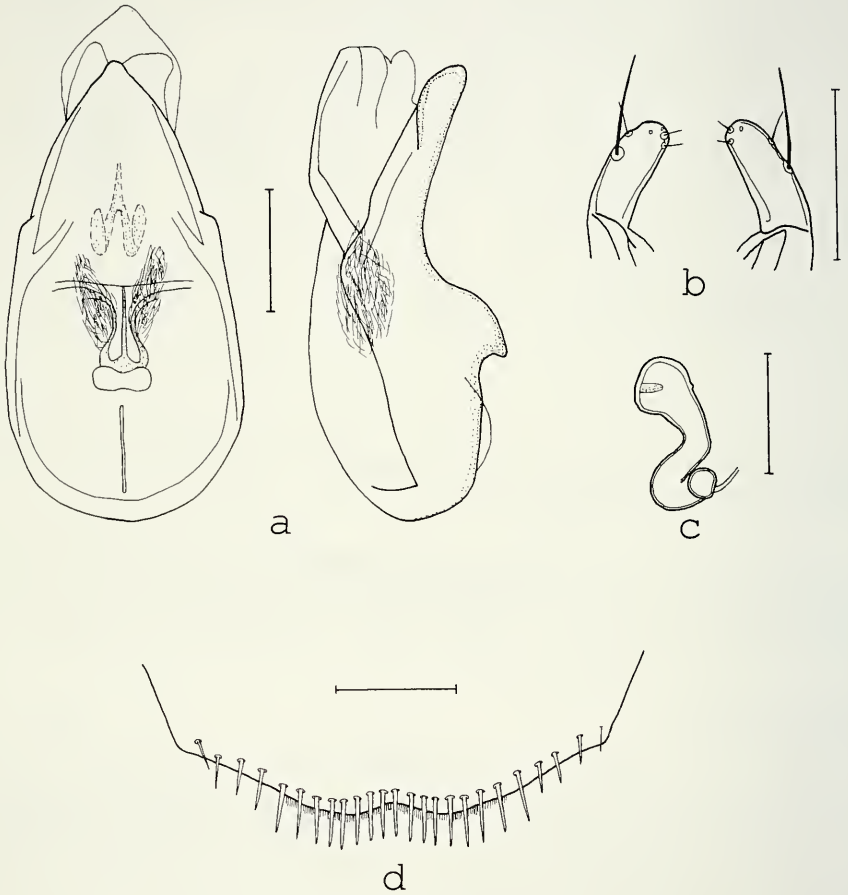


FIG. 5

*Geostiba noctis* sp. n. (HT): aedeagus in ventral and in lateral view (a); apical lobes of paramere (b); spermatheca (c); hind margin of ♀ sternite VIII (d). Scales: 0.1 mm.

KEY TO THE SPECIES OF MADEIRAN *Geostiba*

In order to account for the new species the diagnostic key in ASSING & WUNDERLE (1996) is supplemented as follows:

11. ♂: apex of paramere with one long and three short setae. . . . . 11a  
 – ♂: apex of paramere with two long and two short setae. . . . . 14  
 11a ♂: internal sac of median lobe with two rows of distinctly sclerotized spines. . . . . 11b  
 – ♂: internal sac of median lobe without such spines. . . . . 11c  
 11b On average larger species: HW >275, PW >315, PL >290, SL >845.  
 ♂: internal sac with two short rows, each composed of ca. 3 - 6 spines (Fig. 4a); apical lobe of paramere as in Figs 4b-d.  
 ♀: unknown. . . . . *G. tenebrarum* sp. n.  
 – On average smaller: HW <275, PW <325, PL <290, SL <850.  
 ♂: internal sac with two long rows, each consisting of ca. 10 or more spines (Fig. 3a); apical lobe of paramere as in Fig. 3b.  
 ♀: hind margin of sternite VIII distinctly concave (Fig. 3d); spermatheca as in Fig. 3c. . . . . *G. temeris* sp. n.  
 11c Eye rudiments without trace of pigmentation; relatively large species.  
 ♂: ventral process of median lobe in ventral view broadly triangular and with pointed apex, in lateral view relatively broad; internal sac with pair of dark assemblages of diffuse structures (Fig. 5a); apical lobe of paramere relatively stout and short (Fig. 5b).  
 ♀: hind margin of sternite VIII with uninterrupted row of stout bristles (Fig. 5d); spermatheca as in Fig. 5c. . . . . *G. noctis* sp. n.  
 – Eye rudiments with traces of pigmentation; mostly smaller species.  
 ♂: ventral process of median lobe of different shape, internal sac without such pair of dark assemblages; apical lobe of paramere relatively longer and slenderer.  
 ♀: row of stout bristles at posterior margin of sternite VIII interrupted in the middle. (Note that the ♀ of *G. ericicola* is unknown.) . . . . . 11d  
 11d ♂: ventral process of median lobe in ventral view constricted basally, in lateral view not widened apically (Fig. 2a); apical lobe of paramere distinctly parallel and slender (Fig. 2b). . . . . *G. ericicola* sp. n.  
 ♂: ventral process of different shape, not constricted basally and broader in ventral view; apical lobe of paramere not distinctly parallel, often stouter. . . . . 12

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## REFERENCE

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